



# SPYWOLF

## Security Audit Report



Completed on  
**October 18, 2023**

@SPYWOLFNETWORK



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# OVERVIEW

This audit has been prepared for **Last Land** to review the main aspects of the project to help investors make an informative decision during their research process.

You will find a summarized review of the following key points:

- ✓ Contract's source code
- ✓ Owners' wallets
- ✓ Tokenomics
- ✓ Team transparency and goals
- ✓ Website's age, code, security and UX
- ✓ Whitepaper and roadmap
- ✓ Social media & online presence

“

*The results of this audit are purely based on the team's evaluation and does not guarantee nor reflect the projects outcome and goal*

”

- SPYWOLF Team -





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# Last Land



## PROJECT DESCRIPTION

### According to their website:

"In the aftermath of the apocalypse, LastLand is your final sanctuary. As a survivor, your mission is clear: build and manage your shelter, explore the wastelands, and gather the vital metal resources needed for survival.

Upgrade your cars and gas tanks to extend their wasteland expeditions, and even refine metal to ensure a steady supply. The highlight? Earn BNB with an astounding APY of up to 1100%."

For more info: <https://docs.lastland.io>

**Release Date:** October 19, 2023

**Category:** Staking

01



# CONTRACT INFO

Token Name  
N/A

Symbol  
N/A

Contract Address  
0x466Ed2B7AD17d4528c7b5364A528d66bF81815fe

Network  
Binance Smart Chain

Language  
Solidity

Deployment Date  
Oct 17 2023

Contract Type  
Staking

Total Supply  
N/A

Status  
Not aunched

## TAXES

Buy Tax  
**10%**

Sell Tax  
**none**

\*Taxes cannot be changed



## Our Contract Review Process

The contract review process pays special attention to the following:

- ✓ Testing the smart contracts against both common and uncommon vulnerabilities
- ✓ Assessing the codebase to ensure compliance with current best practices and industry standards.
- ✓ Ensuring contract logic meets the specifications and intentions of the client.
- ✓ Cross referencing contract structure and implementation against similar smart contracts produced by industry leaders.
- ✓ Thorough line-by-line manual review of the entire codebase by industry experts.

### Blockchain security tools used:

- OpenZeppelin
- Mythril
- Solidity Compiler
- Hardhat



## TOKEN TRANSFERS STATS

Transfer Count	N/A
Uniq Senders	N/A
Uniq Receivers	N/A
Total Amount	N/A
Median Transfer Amount	N/A
Average Transfer Amount	N/A
First transfer date	N/A
Last transfer date	N/A
Days token transferred	N/A

## SMART CONTRACT STATS

Calls Count	1
External calls	1
Internal calls	0
Transactions count	1
Uniq Callers	1
Days contract called	1
Last transaction time	2023-10-17 14:30:01 UTC
Created	2023-10-17 14:30:01 UTC
Create TX	0x1873062a5f9de5e605325e5439462f5731217900d82007cfc2e647d6f6e2aab8
Creator	0xA74AFFEDe3eC498DfeA22325F1F5A649FcFb1649





# VULNERABILITY CHECK

Design Logic	Passed
Compiler warnings.	Passed
Private user data leaks	Passed
Timestamp dependence	Passed
Integer overflow and underflow	Passed
Race conditions and reentrancy. Cross-function race conditions	Passed
Possible delays in data delivery	Passed
Oracle calls	Passed
Front running	Passed
DoS with Revert	Passed
DoS with block gas limit	Passed
Methods execution permissions	Passed
Economy model	Passed
Impact of the exchange rate on the logic	Passed
Malicious Event log	Passed
Scoping and declarations	Passed
Uninitialized storage pointers	Passed
Arithmetic accuracy	Passed
Cross-function race conditions	Passed
Safe Zeppelin module	Passed
Fallback function security	Passed



# THREAT LEVELS

When performing smart contract audits, our specialists look for known vulnerabilities as well as logical and access control issues within the code. The exploitation of these issues by malicious actors may cause serious financial damage to projects that failed to get an audit in time. We categorize these vulnerabilities by the following levels:

## High Risk

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Issues on this level are critical to the smart contract's performance/functionality and should be fixed before moving to a live environment.

## Medium Risk

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Issues on this level are critical to the smart contract's performance/functionality and should be fixed before moving to a live environment.

## Low Risk

---

Issues on this level are minor details and warning that can remain unfixed.

## Informational

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Information level is to offer suggestions for improvement of efficacy or security for features with a risk free factor.





# FOUND THREATS

## High Risk

No high risk-level threats found in this contract.

## Medium Risk

No medium risk-level threats found in this contract.

## Low Risk

No low risk-level threats found in this contract.



## Informational

Users can buy coins with bnb.

10% from the buy value will withdrawn from the contract to the project owners (fees).

```
function buyCoins(address referrer) public payable {
    require(isLaunched(), "contract hasn't launched yet");
    require(msg.sender == tx.origin, "not allowed");
    require(msg.value >= MIN_PURCHASE, 'insufficient amount');
    require(referrer != msg.sender, "wrong referrer");

    User storage user = users[msg.sender];

    payFee(msg.value);
    recordReferral(referrer, msg.sender);
    payRefFee(msg.sender, msg.value);

    if (user.stats.totalDeposited == 0) {
        totalUsers = totalUsers.add(1);
    }

    uint256 coinsAmount = fromBnbToCoins(msg.value);

    user.balance.coins = user.balance.coins.add(coinsAmount);
    user.stats.totalDeposited = user.stats.totalDeposited.add(msg.value);

    totalStaked = totalStaked.add(msg.value);

    emit coinsBought(coinsAmount, msg.sender, block.timestamp);
}

function payFee(uint256 amount) internal {

    uint256 marketingFee = amount.mul(MARKETING_FEE).div(PERCENTS_DIVIDER);
    uint256 devFee = amount.mul(DEV_FEE).div(PERCENTS_DIVIDER);

    payable(marketingFund).transfer(marketingFee);
    payable(dev).transfer(devFee);
}
```



## Informational

Players can reinvest their harvested metal and convert it into coins. When users do this from the buyCoinsForMetal function, players will receive additional 5% coins bonus.

On each reinvestment event 10% fee of reinvested amount is paid from the contract's current balances to project owners.

```
uint256 constant public PERCENTS_DIVIDER = 10_000;
uint256 constant public REINVESTMENT_BONUS = 500; //5%
function buyCoinsForMetal(uint256 amount) public {
    require(users[msg.sender].balance.metal >= amount, "amount exceeds balance");

    uint256 coins = fromMetalToCoins(amount);
    uint256 bonusCoins = coins.mul(REINVESTMENT_BONUS).div(PERCENTS_DIVIDER);

    users[msg.sender].balance.metal = users[msg.sender].balance.metal.sub(amount);
    users[msg.sender].balance.coins = users[msg.sender].balance.coins.add(coins).add(bonusCoins);

    uint256 bnbAmount = fromCoinsToBnb(coins);

    payFee(bnbAmount);

    emit coinsBought(coins.add(bonusCoins), msg.sender, block.timestamp);
}
```



## Informational

Users can sell their harvested metal for bnb in ratio 1:100000.  
100000 Metal = 1 BNB

```
uint256 constant public METAL_PRICE = 0.00001 ether; // 1 BNB = 100000 METAL

function fromMetalToBnb(uint256 amount) public pure returns(uint256) {
    return amount.mul(METAL_PRICE);
}

function sellMetal(uint256 amount) public {
    require(users[msg.sender].balance.metal >= amount, "amount exceeds balance");

    uint256 payout = fromMetalToBnb(amount);

    users[msg.sender].balance.metal = users[msg.sender].balance.metal.sub(amount);
    users[msg.sender].stats.totalWithdrawn = users[msg.sender].stats.totalWithdrawn.add(payout);

    payable(msg.sender).transfer(payout);

    emit metalSold(msg.sender, amount, block.timestamp);
}
```



## Informational

Users can use the `forgeMetal` function to stake their harvested metal and get daily metal ROI of 0.8%.

```
function forgeMetal(uint256 amount) public {
    require(amount > 0, "wrong amount");
    require(users[msg.sender].balance.metal >= amount, "insufficient amount");

    users[msg.sender].balance.metal = users[msg.sender].balance.metal.sub(amount);

    deposit(amount, msg.sender);
}

function deposit(uint256 amount, address userAddr) internal {
    syncForge(userAddr);

    forges[userAddr].depositedAmount = forges[userAddr].depositedAmount.add(amount);
    forges[userAddr].checkpoint = block.timestamp;

    emit onDeposit(userAddr, amount, block.timestamp);
}

function syncForge(address userAddr) internal {
    uint256 dividends = getForgeDividends(userAddr);

    if(dividends > 0) {
        forges[userAddr].harvestableAmount = forges[userAddr].harvestableAmount.add(dividends);
    }
}

function getForgeDividends(address userAddr) public view returns(uint256 totalAmount){
    Forge memory forge = forges[userAddr];
    uint256 share = forge.depositedAmount.mul(DAILY_ROI).div(PERCENT_DIVIDER);

    uint256 from = forge.checkpoint;
    uint256 to = block.timestamp;

    totalAmount = share.mul(to.sub(from)).div(TIME_STEP);
}
```





## Informational

Users can harvest their forged metal via the `harvestForgedMetal` function. Harvested metal will be added to their metal balances.

```
function harvestForgedMetal() public {
    uint256 harvestedAmount = harvest(msg.sender);

    users[msg.sender].balance.metal = users[msg.sender].balance.metal.add(harvestedAmount);
}

function harvest(address userAddr) internal returns(uint256){
    uint256 dividends = getForgeDividends(userAddr);
    uint256 claimableAmount = getClaimableAmount(userAddr);
    uint256 harvestableAmount = forges[userAddr].harvestableAmount;

    require(dividends.add(claimableAmount).add(harvestableAmount) > 0, "nothing to harvest");

    forges[userAddr].checkpoint = block.timestamp;

    if(harvestableAmount > 0) {
        dividends = dividends.add(harvestableAmount);
        forges[userAddr].harvestableAmount = 0;
    }

    if(claimableAmount > 0) {
        uint256 unstakedAmount = unstake(userAddr);
        dividends = dividends.add(unstakedAmount);
    }

    emit onHarvest(userAddr, dividends, block.timestamp);

    return dividends;
}
```



## Informational

Users can use coins to buy new cars and upgrade their fuel tanks to endure more time in the wastelands.

```
function buyCar(uint8 _type) public {
    require(_type > 0 && _type < 8, "wrong car type");

    Car memory car = getCarByType(_type);
    User storage user = users[msg.sender];

    require(user.balance.coins >= car.cost, "insufficient coins amount");

    user.balance.coins = user.balance.coins.sub(car.cost);
    user.cars.push(car);

    totalCars = totalCars.add(1);

    emit carBought(_type, msg.sender, block.timestamp);
}

function upgradeFuelTank() public {

    User storage user = users[msg.sender];

    require(user.stats.totalDeposited != 0, "user not found");
    require(user.fuelTankLevel < 2, "fuel tank has max lvl");

    FuelTank memory fuelTank = getFuelTankByLvl(user.fuelTankLevel.add(1));

    require(user.balance.coins >= fuelTank.cost, "insufficient coins balance");

    user.balance.coins = user.balance.coins.sub(fuelTank.cost);
    user.fuelTankLevel = user.fuelTankLevel.add(1);

    emit fuelTankUpgraded(msg.sender, user.fuelTankLevel, block.timestamp);
}

function getFuelTankByLvl(uint256 lvl) public pure returns(FuelTank memory) {
    if(lvl == 0) {
        return FuelTank(0, 4 hours);
    } else if(lvl == 1) {
        return FuelTank(150, 6 hours);
    } else {
        return FuelTank(300, 8 hours);
    }
}
```





RECOMMENDATIONS FOR

# GOOD PRACTICES

---

1

Consider fundamental tradeoffs

2

Be attentive to blockchain properties

3

Ensure careful rollouts

4

Keep contracts simple

5

Stay up to date and track development

## LastLand

### GOOD PRACTICES FOUND

- ✓ The owner cannot stop or pause the contract
- ✓ The smart contract utilizes "SafeMath" to prevent overflows



This is **Return Of Investment (ROI)** dapp.  
Player's ROI depends on how frequently they put their cars into 'wastelands' mode to collect metal.

There are 3 type of assets in the contract's logic:  
BNB, Coins and Metal

Users can purchase coins with BNB.  
With Coins users can purchase cars, equipment, metal and upgrade their fuel tank.  
With Metal users can choose to either convert and withdraw to BNB or purchase Coins to buy new cars and equipment.

Users can choose between 7 different cars.  
Each car have different ROI per hour starting from 1.92% for cheapest car up to 2.5% for the most expensive car (without added equipment).

Users can choose between 13 different levels of equipment which will increase their cars ROI.

If all levels of equipment is purchased, ROI of each car increases up to +20% from the current ROI so it becomes 2.3% ROI for the cheapest car and 3% ROI for the most expensive car with equipment added.

Users can choose to claim their metal and sell it for BNB or forge it for additional 0.8% ROI in Metal.

There is referral system with up to 11% bonus for each newly invited user with upline of 3 referrals. In order to get the bonus, the one who invites new users must be already invested in the contract, otherwise he/she won't receive the bonus. Referral rewards are distributed as 50% coins and 50% metal.

1st ref in the upline gets 7% bonus  
2nd ref in the upline gets 3% bonus  
3rd ref in the upline gets 1% bonus

Example:  
User who invites new investor will receive 7% of invested value if the new investor points it as his referral. User's referral will get 3% and the User's referral's referral will get 1%.

*ROI dapps can be volatile and risky.*

SPYWOLF  
TOKEN



**Website URL**  
<https://lastland.io/>

**Domain Registry**  
<https://www.namecheap.com/>

**Domain Expiration**  
2024-10-04

**Technical SEO Test**  
Passed

**Security Test**  
Passed. SSL certificate present

**Design**  
Very nice overall design with appropriate color scheme and graphics.

**Content**  
There is little information what the product does and how it works. No grammar mistakes found.

**Whitepaper**  
Yes, explanatory

**Roadmap**  
No

**Mobile-friendly?**  
Yes



lastland.io

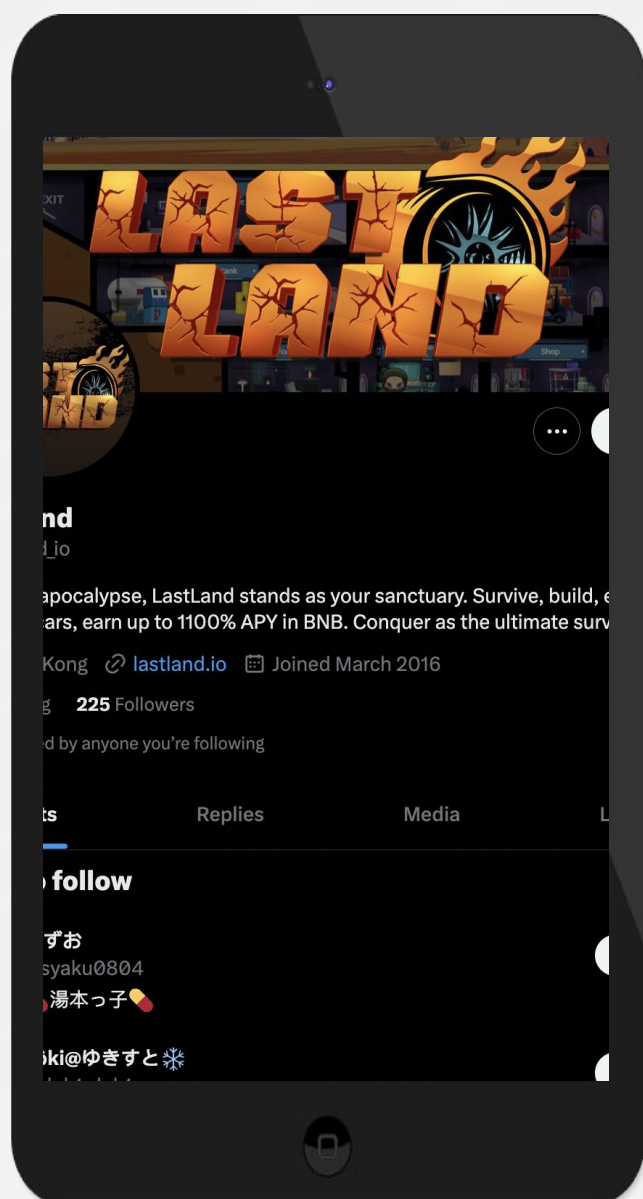


# SOCIAL MEDIA & ONLINE PRESENCE



## ANALYSIS

Project's social media  
pages are active



**Twitter**

@lastland\_io

- 225 followers
- No posts



**Discord**

- Not available



**Telegram**

@lastland\_chat

- 648 members
- Active members
- Active mods



**Medium**

- Not available



# SPYWOLF

## CRYPTO SECURITY

Audits | KYCs | dApps  
Contract Development

# ABOUT US

We are a growing crypto security agency offering audits, KYCs and consulting services for some of the top names in the crypto industry.

- ✓ OVER 500 SUCCESSFUL CLIENTS
- ✓ MORE THAN 500 SCAMS EXPOSED
- ✓ MILLIONS SAVED IN POTENTIAL FRAUD
- ✓ PARTNERSHIPS WITH TOP LAUNCHPADS, INFLUENCERS AND CRYPTO PROJECTS
- ✓ CONSTANTLY BUILDING TOOLS TO HELP INVESTORS DO BETTER RESEARCH

To hire us, reach out to  
[contact@spywolf.co](mailto:contact@spywolf.co) or  
[t.me/joe\\_SpyWolf](https://t.me/joe_SpyWolf)

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# Disclaimer

This report shows findings based on our limited project analysis, following good industry practice from the date of this report, in relation to cybersecurity vulnerabilities and issues in the framework and algorithms based on smart contracts, overall social media and website presence and team transparency details of which are set out in this report. In order to get a full view of our analysis, it is crucial for you to read the full report.

While we have done our best in conducting our analysis and producing this report, it is important to note that you should not rely on this report and cannot claim against us on the basis of what it says or doesn't say, or how we produced it, and it is important for you to conduct your own independent investigations before making any decisions. We go into more detail on this in the disclaimer below – please make sure to read it in full.

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No applications were reviewed for security. No product code has been reviewed.